

**TOWN OF AMESBURY  
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2008

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## Report Summary:

### Highlights

### January 1, 2006

### January 1, 2008

#### Contributions

Funding Schedule FY 2009	\$2,717,707	\$2,717,707
Funding Schedule FY 2010	2,824,227	2,730,354

#### Funded Ratios

GAS No. 25	56.3%	65.3%
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#### Participants

Actives	314	292
Retirees and Beneficiaries	212	206
Inactives	80	85
Disabled	<u>17</u>	<u>17</u>
Total	623	600

#### Payroll

Payroll of Active Members	\$11,652,440	\$11,374,648
Average Payroll	37,110	38,954

#### Normal Cost

Employer	515,760	616,338
Employee	950,423	937,023
Administrative Expenses	<u>125,000</u>	<u>125,000</u>
Total	1,591,183	1,678,361

#### Actuarial Accrued Liabilities

Actives	25,668,858	28,127,584
Retirees, Beneficiaries, Disabilities and Inactives	<u>30,281,901</u>	<u>31,925,570</u>
Total	56,634,407	60,053,154

#### Actuarial Value of Assets

<u>31,892,926</u>	<u>39,214,087</u>
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#### Unfunded Actuarial Accrued Liabilities

\$24,741,481	\$20,839,067
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## **Introduction**

This report presents the findings of an actuarial valuation as of January 1, 2008, of Amesbury Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2008.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Town of Amesbury Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2008.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

### **Actuarial Experience**

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last two years, the total unfunded actuarial accrued liability decreased by 15.8% to \$20,839,067. The decrease is the result of net favorable actuarial experience during the preceding years. The market value of assets had returns of 14.18% and 8.19% for 2006 and 2007, respectively. Due to an investment return more than the 8.25% assumption, the result is a gain of \$1,860,084. The sources of the (gain)/loss are as follows:

Investment	(1,860,189)
Salary Increases	24,949
New Participants	216,244
Active - Retirements	159,357
Active - Terminations	(502,544)
Active - Mortality	(125,067)
Active - Disabilities	(344,065)
Inactive - Mortality and data changes	(1,005,970)
Other, including purchased service, data, interest on employee deductions, contributions	(1,193,300)
Total (gain)/loss	(4,630,585)

## Actuarial Costs and Liabilities:

### Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

**Table I**

	<u>January 1, 2006</u>	<u>January 1, 2008</u>
Superannuation	\$993,791	\$1,066,311
Termination	138,152	136,502
Death	104,780	125,685
Disability	229,460	224,863
Administrative Expenses	<u>125,000</u>	<u>125,000</u>
Total Normal Cost	1,591,183	1,678,361
% of Pay	13.7%	14.8%
Employee Contributions	950,423	937,023
% of Pay	8.2%	8.2%
Employer Normal Cost	\$640,760	\$741,338
% of Pay	5.5%	6.5%

**Present Value of Actuarial Accrued Liabilities**

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

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	<b>Table II</b>		
		<u>January 1, 2006</u>	<u>January 1, 2008</u>
Actives			
Superannuations		\$22,261,679	\$24,710,445
Termination		590,168	502,043
Death		827,089	856,260
Disability		1,989,922	2,058,836
Retirees and Inactives			
Retirees and Beneficiaries		26,461,416	26,972,015
Terminated (Refund)		683,648	1,106,526
Disabled		<u>3,820,485</u>	<u>3,847,029</u>
Total		\$56,634,407	\$60,053,154

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**Present Value of Future Benefits**

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

**Table III**

	<u>January 1, 2006</u>	<u>January 1, 2008</u>
Actives		
Superannuation	\$31,753,421	\$34,474,729
Termination	1,137,623	1,012,989
Death	1,780,203	1,843,980
Disability	4,403,095	4,382,017
Retirees and Inactives		
Retirees and Beneficiaries	26,461,416	26,972,015
Terminated (Refund)	683,648	1,106,526
Disabled	<u>3,820,485</u>	<u>3,847,029</u>
Total	\$70,039,891	\$73,639,285

## Funded Status and Appropriations:

### Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

**Table IV**

	<u>January 1, 2006</u>	<u>January 1, 2008</u>
Cash equivalents	\$988,256	\$5,598,074
Short term investments	0	0
Fixed income securities	7,533,188	0
Equities	16,338,450	33,641,272
International	3,679,216	0
Real Estate	3,358,281	86,146
Venture Capital	0	0
Other	17,435	0
Accounts receivable	4,590	13,872
Accounts payable	(26,489)	(125,277)
Accrued income	<u>0</u>	<u>0</u>
Total Market Value	\$31,892,926	\$39,214,087
Total Actuarial Value	\$31,892,926	\$39,214,087

## **Unfunded Actuarial Accrued Liabilities**

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

**Table VI**

	<u>January 1, 2006</u>	<u>January 1, 2008</u>
Actuarial Accrued Liability	\$56,634,407	\$60,053,154
Actuarial Assets	<u>31,892,926</u>	<u>39,214,087</u>
Unfunded Actuarial Accrued Liability	\$24,741,481	\$20,839,067
Funded Status	56.3%	65.3%

## Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2023  
\$ 18,021,270 over 15 years with 4.5% increasing payments
- Increasing amortization of the 2002 Early Retirement Incentive unfunded liability by June 30, 2020  
\$ 545,109 over 12 years with 4.36% increasing payments
- Increasing amortization of the 2003 Early Retirement Incentive unfunded liability by June 30, 2025  
\$ 2,272,688 over 17 years with 4.5% increasing payments
- Increasing amortization of the current (gains)/losses by June 30, 2023  
\$ -4,630,585 over 15 years with 4.5% increasing payments
- Interest adjustment for payments made from July through December

The pension appropriation is shown in Table VII.

**Table VII**

	<u>January 1, 2006</u>	<u>January 1, 2008</u>
Normal cost	\$640,760	\$741,338
Amortization payment of the prior accrued liability	1,186,016	1,520,018
Amortization payment of 2002 ERI liability	50,605	55,113
Amortization payment of 2003 ERI liability	159,916	174,633
Amortization payment of current (gains)/losses	<u>315,034</u>	<u>(307,679)</u>
Total cost	\$2,352,331	\$2,183,423
% of Pay	20.2%	19.2%
Fiscal 2009 cost	\$2,717,707	\$2,717,707
Fiscal 2010 cost	\$2,824,227	\$2,730,354

### **Appropriation Forecast**

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 18 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 23.9% of payroll, decreasing to 16.9% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 4.5% thereafter. The increase in the cost as a percentage of payroll is a result of the increase in expected future working lifetime due to a younger workforce.

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**Appropriation Forecast**

Fiscal Year	Employee	Employer	Amortization	Employer	Employer	Funded
Ending	Payroll*	Contribution	Normal Cost	Payments	Total Cost	Ratio %**
			with Interest	with Interest	with Interest	
2009	\$11,374,648	\$937,023	\$784,107	\$1,933,601	\$2,717,707	65.4
2010	\$11,886,507	\$993,341	\$804,423	\$1,925,931	\$2,730,354	67.3
2011	\$12,421,400	\$1,052,831	\$824,979	\$2,012,513	\$2,837,492	69.3
2012	\$12,980,363	\$1,115,663	\$845,757	\$2,102,987	\$2,948,744	71.3
2013	\$13,564,479	\$1,182,018	\$866,734	\$2,197,528	\$3,064,262	73.4
2014	\$14,174,881	\$1,252,086	\$887,887	\$2,296,320	\$3,184,207	75.6
2015	\$14,812,751	\$1,326,066	\$909,188	\$2,399,554	\$3,308,742	77.7
2016	\$15,479,324	\$1,404,169	\$930,608	\$2,507,428	\$3,438,036	80.0
2017	\$16,175,894	\$1,486,616	\$952,115	\$2,620,153	\$3,572,268	82.2
2018	\$16,903,809	\$1,573,640	\$973,673	\$2,737,945	\$3,711,618	84.5
2019	\$17,664,481	\$1,665,485	\$995,243	\$2,861,032	\$3,856,275	86.9
2020	\$18,459,382	\$1,762,410	\$1,016,783	\$2,989,654	\$4,006,437	89.3
2021	\$19,290,054	\$1,864,686	\$1,038,246	\$3,026,777	\$4,065,023	91.8
2022	\$20,158,107	\$1,972,597	\$1,059,582	\$3,162,982	\$4,222,564	94.3
2023	\$21,065,222	\$2,086,445	\$1,080,735	\$3,305,316	\$4,386,051	96.8
2024	\$22,013,157	\$2,206,544	\$1,101,647	\$357,461	\$1,459,108	99.5
2025	\$23,003,749	\$2,333,227	\$1,122,252	\$373,547	\$1,495,799	99.7
2026	\$24,038,917	\$2,466,844	\$1,142,481	\$0	\$1,142,481	100.0
2027	\$25,120,669	\$2,607,761	\$1,162,258	\$0	\$1,162,258	100.0
2028	\$26,251,099	\$2,756,365	\$1,181,501	\$0	\$1,181,501	100.0
2029	\$27,432,398	\$2,880,402	\$1,234,669	\$0	\$1,234,669	100.0
2030	\$28,666,856	\$3,010,020	\$1,290,229	\$0	\$1,290,229	100.0
2031	\$29,956,865	\$3,145,471	\$1,348,289	\$0	\$1,348,289	100.0
2032	\$31,304,923	\$3,287,017	\$1,408,963	\$0	\$1,408,963	100.0
2033	\$32,713,645	\$3,434,933	\$1,472,366	\$0	\$1,472,366	100.0
2034	\$34,185,759	\$3,589,505	\$1,538,622	\$0	\$1,538,622	100.0
2035	\$35,724,118	\$3,751,032	\$1,607,860	\$0	\$1,607,860	100.0
2036	\$37,331,704	\$3,919,829	\$1,680,214	\$0	\$1,680,214	100.0
2037	\$39,011,630	\$4,096,221	\$1,755,824	\$0	\$1,755,824	100.0
2038	\$40,767,154	\$4,280,551	\$1,834,836	\$0	\$1,834,836	100.0
2039	\$42,601,675	\$4,473,176	\$1,917,403	\$0	\$1,917,403	100.0
2040	\$44,518,751	\$4,674,469	\$2,003,686	\$0	\$2,003,686	100.0

\* Calendar basis

\*\* Beginning of Fiscal Year

**GASB Statements No. 25 and No. 27**

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

**Table VIII**

	<u>January 1, 2006</u>	<u>January 1, 2008</u>
(1) Actuarial Accrued Liability	\$56,634,407	\$60,053,154
(2) Actuarial Value of Assets	<u>31,892,926</u>	<u>39,214,087</u>
(3) Unfunded Actuarial Accrued Liability	24,741,481	20,839,067
(4) Funded Ratio (2)/(1)	56.3%	65.3%
(5) Covered Payroll	\$11,652,440	\$11,374,648
(6) UAAL as a percentage of payroll: (3)/(5)	212.3%	183.2%
(7) Annual Required Contribution (ARC)	\$2,103,039	\$2,717,707
(8) Net Pension Obligation	\$0	\$0

**PERAC Annual Statement**  
**APPENDIX PAGE 3**  
**ACTUARIAL VALUATION AND ASSUMPTIONS**

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2008.

The normal cost for employees on that date was:	\$937,023	8.2% of pay
The normal cost for the employer was:	616,338	5.4% of pay
The actuarial liability for active members was:		\$28,127,584
The actuarial liability for retired and inactive members was:		31,925,570
Total actuarial accrued liability:		60,053,154
System assets as of that date:		39,214,087
Unfunded actuarial accrued liability:		\$20,839,067
The ratio of system's assets to total actuarial liability was		65.3%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.25%
Rate of Salary Increase:	4.0%

**SCHEDULE OF FUNDING PROGRESS**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/08	\$39,214,087	\$60,053,154	\$20,839,067	65.3%	\$11,374,648	183.2%
01/01/06	31,892,926	56,634,407	24,741,481	56.3%	11,652,440	212.3%
01/01/04	27,735,259	47,405,492	19,670,233	59.0%	10,572,920	186.0%
01/01/03	23,420,773	43,172,723	19,751,950	54.0%	10,873,793	182.0%
01/01/02	25,271,096	40,814,053	15,542,957	62.0%	10,380,709	150.0%
01/01/01	26,423,203	33,559,596	7,136,393	79.0%	10,111,418	71.0%
01/01/00	26,456,262	32,666,646	6,210,385	81.0%	9,584,283	65.0%
01/01/99	22,632,257	31,623,381	8,991,124	72.0%	9,084,628	99.0%

## **EXHIBITS**

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## Age/Service Distribution with Salary as of January 1, 2008

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	4	0	0	0	0	0	0	0	0	4
	27,450	0	0	0	0	0	0	0	0	27,450
25-29	12	1	0	0	0	0	0	0	0	13
	29,580	46,646	0	0	0	0	0	0	0	30,893
30-34	5	7	1	0	0	0	0	0	0	13
	38,014	28,928	39,145	0	0	0	0	0	0	33,209
35-39	7	16	8	6	0	0	0	0	0	37
	31,513	47,478	58,299	50,336	0	0	0	0	0	47,261
40-44	9	14	6	1	9	0	0	0	0	39
	18,311	36,257	46,170	19,946	50,576	0	0	0	0	36,527
45-49	9	18	8	3	10	3	0	0	0	51
	16,207	30,545	37,746	47,282	62,175	60,367	0	0	0	38,085
50-54	11	14	13	12	5	7	8	0	0	70
	24,421	26,731	33,249	38,688	50,645	67,090	65,582	0	0	39,812
55-59	2	6	8	7	8	5	3	3	0	42
	7,695	29,983	42,048	31,295	44,763	52,713	105,018	46,145	0	43,474
60-64	3	3	6	1	4	0	1	0	0	18
	33,331	43,041	34,415	44,451	27,865	0	48,728	0	0	35,569
65-69	2	3	0	0	0	0	0	0	0	5
	14,636	12,810	0	0	0	0	0	0	0	13,540
70+	0	0	0	0	1	0	0	0	0	1
	0	0	0	0	13,309	0	0	0	0	13,309
Total Employees	64	82	50	30	37	15	12	3	-	293
Average Salary	24,990	33,999	41,193	39,719	49,001	60,953	74,037	46,145	-	38,883

## Retiree Distribution as of January 1, 2008

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	2	0	2	18,479	0	18,479
50-54	5	5	10	183,781	47,351	231,132
55-59	13	5	18	454,700	57,035	511,735
60-64	9	18	27	237,606	169,511	407,117
65-69	15	21	36	348,390	263,159	611,549
70-74	6	21	27	111,497	217,990	329,487
75-79	5	22	27	82,775	269,771	352,546
80-84	3	31	34	16,040	276,418	292,458
85-89	7	14	21	68,481	109,211	177,692
90-94	0	3	3	0	24,068	24,068
95-99	0	1	1	0	9,303	9,303
Total	65	141	206	1,521,750	1,443,815	2,965,566
Average (Age/Payment)	67.1	74.3	72	23,412	10,240	14,396
Frequency Percent	31.6	68.4	100	51.3	48.7	100

## Disabled Retiree Distribution as of January 1, 2008

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	0	0	0	0	0	0
50-54	3	1	4	88,826	5,658	94,484
55-59	2	0	2	63,454	0	63,454
60-64	3	0	3	87,059	0	87,059
65-69	3	0	3	69,013	0	69,013
70-74	0	1	1	0	5,498	5,498
75-79	1	0	1	23,172	0	23,172
80-84	2	0	2	43,185	0	43,185
85-89	0	0	0	0	0	0
90-94	0	1	1	0	19,294	19,294
95-99	0	0	0	0	0	0
Total	14	3	17	374,710	30,449	405,159
Average (Age/Payment)	65.2	74.2	66.8	26,765	10,150	23,833
Frequency Percent	82.4	17.6	100	92.5	7.5	100

**EXHIBIT 4 - CASHFLOW FORECAST:**

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2008	\$3,554,730	\$937,023	\$2,717,707	\$3,019,177	\$3,119,177
2009	3,655,608	993,341	2,730,354	3,355,647	3,423,734
2010	3,789,610	1,052,831	2,837,492	3,633,725	3,734,437
2011	3,951,328	1,115,663	2,948,744	3,936,398	4,049,477
2012	4,151,184	1,182,018	3,064,262	4,263,612	4,358,708
2013	4,350,053	1,252,086	3,184,207	4,616,472	4,702,713
2014	4,568,557	1,326,066	3,308,742	4,997,023	5,063,273
2015	4,838,612	1,404,169	3,438,036	5,405,344	5,408,937
2016	5,128,747	1,486,616	3,572,268	5,841,487	5,771,623
2017	5,451,542	1,573,640	3,711,618	6,306,354	6,140,070
2018	5,769,527	1,665,485	3,856,275	6,801,944	6,554,178
2019	6,073,648	1,762,410	4,006,437	7,332,398	7,027,597
2020	6,410,078	1,864,686	4,065,023	7,898,470	7,418,101
2021	6,765,143	1,972,597	4,222,564	8,498,344	7,928,362
2022	7,139,877	2,086,445	4,386,051	9,139,683	8,472,303
2023	7,535,367	2,206,544	1,459,108	9,753,470	5,883,755
2024	7,952,764	2,333,227	1,495,799	10,221,531	6,097,793
2025	8,393,282	2,466,844	1,142,481	10,697,209	5,913,253
2026	8,858,200	2,607,761	1,162,258	11,165,476	6,077,295
2027	9,348,871	2,756,365	1,181,501	11,646,278	6,235,272
2028	9,866,722	2,880,402	1,234,669	12,137,177	6,385,526
2029	10,413,257	3,010,020	1,290,229	12,639,196	6,526,189
2030	10,990,065	3,145,471	1,348,289	13,151,476	6,655,171
2031	11,598,824	3,287,017	1,408,963	13,672,977	6,770,133
2032	12,241,303	3,434,933	1,472,366	14,202,468	6,868,464
2033	12,919,371	3,589,505	1,538,622	14,738,495	6,947,252
2034	13,634,997	3,751,032	1,607,860	15,279,359	7,003,253
2035	14,390,264	3,919,829	1,680,214	15,823,088	7,032,868
2036	15,187,365	4,096,221	1,755,824	16,367,412	7,032,092
2037	15,697,109	4,280,551	1,834,836	16,923,126	7,341,405

amounts in thousands

## **EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:**

This summary is prepared in accordance with Chapter 32 as of January 1, 2008, and does not take into account any subsequent changes.

### **1. Administration**

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

### **2. Participation**

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

### 3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

### 4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<b><u>Date of Hire</u></b>	<b><u>Member Contribution Rate</u></b>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of \$30,000

### 5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

### 6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

## **7. Service Retirement**

### **a. Eligibility:**

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

**8. Deferred Vested Retirement****a. Eligibility:**

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

**b. Benefit Amount:**

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

**c. Refund of Contributions:**

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

**9. Accidental Disability****a. Eligibility:**

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

**b. Benefit Amount:**

The accidental disability amount is 72% of annual salary plus \$450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

**10. Ordinary Disability****a. Eligibility:**

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

**b. Benefit Amount:**

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

**11. Survivor Benefits****a. Occupational Death:**

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

**b. Non-Occupational Death:**

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

**12. Cost-of-Living Increases**

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

**13. Postretirement Death Benefits**

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

## EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

### 1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

### 2. Valuation Date

January 1, 2008.

### 3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

### 4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.25% per annum.

### 5. Salary Scale

It is assumed that salaries including longevity will increase according to the following table:

<u>Year</u>	<u>Rate</u>
2008	4.0%
2009	4.0%
2010	4.5%
2011	4.5%
2012+	5.0%

**6. Cost-of-Living Increases**

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

**7. Value of Investments**

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is set equal to the market value.

**8. Annual Rate of Withdrawal Prior to Retirement**

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

**9. Annual Rate of Mortality**

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

## 10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

**11. Annual Rate of Disability Prior to Retirement**

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<b><u>Attained Age</u></b>	<b><u>General Employees</u></b>	<b><u>Police and Fire Employees</u></b>
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 50% of all disabilities are ordinary (50% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

**12. Family Composition**

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

**13. Administrative Expenses**

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2008 is \$125,000 and is anticipated to increase at 4.5% per year.

## EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

### 1. **Actuarial Accrued Liability**

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

### 2. **Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

### 3. **Actuarial Cost Method**

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

### 4. **Actuarial Present Value**

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

### 5. **Forecast**

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

**6. Normal Cost**

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

**7. Unfunded Actuarial Accrued Liability**

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

**8. Valuation Method**

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

**9. Vested Liability**

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

## **CERTIFICATION:**

This report fairly represents the actuarial position of the Town of Amesbury Retirement System contributing as of January 1, 2008, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

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Daniel W. Sherman, ASA, MAAA  
Enrolled Actuary No. 05-4086

May 2008

## **BREAKOUTS**

## Breakouts - Payroll Based

	<u>Total</u>	<u>All Others</u>	<u>Housing</u>	<u>School</u>	<u>Sewer</u>	<u>Water</u>
(1) Participants						
(a) Actives	292	154	7	114	6	11
(b) Inactives	85	45	2	35	1	2
(c) Retirees	206	129	5	67	1	4
(d) Disabled Retirees	<u>17</u>	<u>16</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
(e) Total	600	344	15	216	8	17
(2) Payroll of Active Participants	\$11,374,648	\$7,410,974	\$319,536	\$2,787,165	\$306,367	\$550,606
(3) Percentage of Payroll	100.00%	65.15%	2.81%	24.50%	2.69%	4.84%
(4) Normal Cost						
(a) ERI	229,746	219,930	0	9,816	0	0
(b) Remaining Amortizations	1,520,018	990,344	42,700	372,455	40,940	73,579
(c) Employer Normal Cost	616,338	401,565	17,314	151,023	16,601	29,835
(d) Administrative Expenses	<u>125,000</u>	<u>81,442</u>	<u>3,511</u>	<u>30,629</u>	<u>3,367</u>	<u>6,051</u>
(e) Total	2,491,102	1,693,282	63,526	563,923	60,908	109,464
(5) Fiscal 2009 Cost	\$2,717,707	\$1,847,312	\$69,305	\$615,220	\$66,448	\$119,422
(6) Fiscal 2010 Cost	\$2,730,354	\$1,855,909	\$69,627	\$618,083	\$66,758	\$119,977
(7) Percentage of Total Cost	100.00%	67.97%	2.55%	22.64%	2.45%	4.39%

\*Appropriations are allocated based on the ratio of the division payroll to the total payroll.

## Breakouts - Actuarial Based

	<u>Total</u>	<u>All Others</u>	<u>Housing</u>	<u>School</u>	<u>Sewer</u>	<u>Water</u>
(1) Participants						
(a) Actives	292	154	7	114	6	11
(b) Inactives	197	125	5	62	1	4
(c) Retirees	0	0	0	0	0	0
(d) Disabled Retirees	<u>9</u>	<u>4</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>0</u>
(e) Total	600	385	12	181	7	15
(2) Payroll of Active Participants	\$11,374,648	\$7,410,974	\$319,536	\$2,787,165	\$306,367	\$550,606
(3) Normal Cost						
(a) Total Normal Cost	1,678,361	1,179,783	72,161	360,508	24,747	41,162
(b) Expected Employee Contributions	610,855	291,444	25,618	223,921	24,733	45,139
(c) Administrative Expenses	<u>125,000</u>	<u>87,867</u>	<u>5,374</u>	<u>26,850</u>	<u>1,843</u>	<u>3,066</u>
(d) Net Employer Normal Cost (a) - (b)	1,067,506	888,339	46,543	136,587	14	(3,977)
(4) Actuarial Accrued Liability	60,053,154	43,451,451	1,878,101	11,326,471	1,281,409	2,115,722
(5) Assets*	<u>39,214,087</u>	<u>28,373,347</u>	<u>1,226,380</u>	<u>7,396,068</u>	<u>836,747</u>	<u>1,381,545</u>
(6) Unfunded Actuarial Accrued Liability (4) - (5)	20,839,067	15,078,104	651,721	3,930,403	444,662	734,177
(7) Amortizations*	1,749,764	1,319,739	47,537	296,502	32,434	53,551
(8) Total Required Employer Contributions (3d) + (7)	2,817,270	2,208,078	94,080	433,089	32,448	49,574
(9) Fiscal 2009 Cost	\$2,717,707	\$2,130,044	\$90,756	\$417,784	\$31,301	\$47,822
Percentage of Total Cost	100.0%	78.4%	3.3%	15.4%	1.2%	1.8%
(10) Fiscal 2010 Cost	\$2,730,354	\$2,139,956	\$91,178	\$419,728	\$31,447	\$48,045
Percentage of Total Cost	100.0%	78.4%	3.3%	15.4%	1.2%	1.8%

\* Allocation is based on the ratio of the Unfunded Actuarial Accrued Liability